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ABSTRACT

Described are the development and field testing of the Revised 1977 Behavior Checklist, one component of a multidisciplinary batter to assess social and emotional dysfunction in populations of 4- and 5-year-old children entering kindergarten. The total screening battery is outlined and development of the 1976 Pilot Version of the Behavior checklist is reviewed. Considered are the following steps in the Revised 1977 Behavior Checklist development: item selection, pretest of the First Revision with parents of 16 children, field testing of second and third revised editions, use of the finalized instrument with parents of 750 children entering kindergarten, and utilization of clinically-based tools to evaluate validity of the checklist. Tables with statistical data are included. (SBH)

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Developing a Tool for Assessing Social-Emotional Functioning of Preschool Children

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DEVELOPING A TOOL FOR ASSESSING

SOCIAL-EMOTIONAL FUNCTIONING OF PRESCHOOL CHILDREN

I. Introduction -- The Need and the Mandate

Mental health clinicians as well as educators have deplored the lack of effective measures to detect children with problems in social-emotional functioning at a point in their lives when remediation can be most beneficial (Hobbs, 1975; Nutall and Gomes, 1975; Mardell and Goldenberg, 1972; Stringer, 1973; Sapir and Wilson, 1967). With increasing initiation of mandatory assessment for many state[1] and federal programs[2] providing services to handicapped children, it has become even more crucial that efficient and economical means be established to identify children in need of further assessment, diagnosis, and early intervention.

The need is not only for more effective instrumentation for assessing young children, but also for a technology that can be utilized within "natural settings" such as public schools. Furthermore, in the interests of economy an appropriate battery should not require extensive demand for specialized staff. It should also be capable of being administered in a short length of time to allow for the assessment of large numbers of children.

The project[3] to be described has the goal of developing and field-testing a battery to assess social and emotional dysfunction in populations of four- and five-year-old children entering kindergarten, an important psycho-social transition period for all children (Freedman, 1972). Although the focus of the research is on social-emotional functioning, it is based on the assumption that manifest deviations from developmentally appropriate levels of functioning in a variety of domains constitute "risk" factors (Escalona, 1974). Therefore, the total screening battery includes assessment

of health, developmental history, and cognitive and sensory development, as well as the Behavior Checklist which is the major topic of this presentation.

The approach to the development of the assessment procedure has been a multi-disciplinary one, incorporating the philosophy of Bower (1969) who cites the need to avoid professional biases in assessing mental health. Specialists in psychiatry, social work, health, psychology, and education have contributed to the components of the total procedure. Active collaboration with a large public school system (Quincy, Massachusetts) had enabled a constant interchange between school personnel and researchers. During the process of instrument development, an ongoing committee of school administrators and staff and research staff reviewed drafts of proposed instruments to aid in determining suitability of items for the target population and clarity of translation of theoretical constructs into behavioral language.

Active cooperation from several other school settings and extensive piloting and pre-testing in ongoing school environments has enabled the researchers to confront procedural problems that, of necessity, occur when research moves out of the laboratory. During the pre-test phase of the research, parents as well as education specialists were able to respond critically to early versions of the screening tools, particularly the Behavior Checklist which will be the component of the battery to be discussed most fully in this paper.

The Total Screening Battery for Kindergarten Children

The total screening battery developed by the research staff in collaboration with the school system included the following elements, both in the pilot project (1976) and in the 1977 field test:[4]

1. Cognitive assessment of child completed by school personnel using the Preschool Screening System (Hainsworth and Hainsworth, 1974), a short individually administered instrument.
2. Auditory and Visual assessments, completed by school nursing staff.
3. A self-administered Parent Questionnaire. This instrument contained the following information:
   a) Demographic characteristics of the child's family
   b) Health status including current health of the child, prenatal perinatal, and neonatal history and illnesses, accidents, and hospitalizations
   c) Developmental landmarks
   d) Current behaviors

While the child was tested by school personnel, each parent filled out the Parent Questionnaire (with help from school guidance personnel, if needed). The total procedure for both parent and child could be completed in 20 to 30 minutes. 861 children were screened in the 1976 pilot testing. In 1977 approximately 750 children were screened in the spring of the school year in Quincy in a little over one week.

II. Assessment of Social-Emotional Functioning: The Behavior Checklist

Although each component of the screening battery contributes to a total assessment of a child, this paper will highlight the development of a newly designed Behavior Checklist specifically including behaviors considered

by clinicians and educators to be indicative of social and emotional dysfunction for this age group. It is anticipated that the procedure being developed will be generalizable ultimately to screening in natural settings, such as schools, with large populations of children. Therefore, each stage of the development of the Behavior Checklist (as with other components) was reviewed by clinicians and educators having specific experience with the target age group (four- and five-year-olds). The presentation that follows focuses specifically on the development of the Behavior Checklist and reflects the contribution of many professionals and parents in developing an assessment tool for social and emotional functioning.

The 1976 Pilot Version of the Behavior Checklist

The 1976 Behavior Checklist was derived from an extensive review of measures of social and emotional functioning of young children. Some specific instruments particularly relevant to the needs of the project included examples developed by Behar, 1974; Kohn et al, 1972; Rutter et al, 1970; Stott, 1962.[5]

As part of the total screening battery, the pilot version of the Behavior Checklist was completed by parents of 861 children in Quincy, Massachusetts during the spring 1976 kindergarten registration. The population of Quincy (90,000) is predominantly Caucasian with a median income slightly below the Boston SMSA. In addition to offering a large population of children, the Quincy site was chosen because of the past collaborative work of the Principal Investigator and the Director of Pupil Personnel. Past collaborative research had resulted in findings indicating that problematic children were often not identified until remedial programs were less possible and/or effective (Reinherz and Griffin, 1971). The school was interested in

engaging in research linked to the state-mandated screening program which offered the potential for early identification of children with incipient difficulties.

Analysis of the 1976 Pilot Behavior Checklist

The data were fully analysed to describe the population tested and to develop and test analytic techniques to both adequately revise the 1976 Behavior Checklist and evaluate the findings from the 1977 screening. Although a large number of statistical techniques were applied to the data, only those directly relevant to a discussion of revisions in the Behavior Checklist are reported.

Items in the Behavior Checklist were evaluated through a dichotomous scoring procedure. This scoring system seemed most appropriate for a screening instrument whose goal is to identify problematic or incipiently problematic behaviors rather than a normal distribution of responses appropriate for conventional testing instruments.

For each item, the negative end of the frequency distribution of responses (approximately 10 percent) was identified as problematic behavior. The remaining 90 percent of responses were considered to describe non-problematic behavior. The choice of 10 percent as a guideline in establishing cutoff points for dichotomous scoring was based on a conservative estimate of dysfunction derived from the Joint Commission on Mental Health of Children (1970), Rutter et al (1970), and Beiser (1974).

A principal components factor analysis was performed on the data from the Behavior Checklist. The checklist generated seven theoretically appropriate factors which explained 43.9 percent of the total variance.

These factors were aggression, withdrawal/distractibility, lack of initiative, sleep problems, excessive complaints, bowel and bladder problems, and speech problems.

Reliability of items included in the Behavior Checklist was assessed through administering the instrument to Quincy parents after a two-week interval. In general, test-retest reliability estimates were moderate, i.e., the median Pearson correlation coefficient for the Behavior Checklist was .65. The frequency distributions and reliability data from the 1976 pilot were two components of the criteria for selection of items to be included in the revised version of the Behavior Checklist.

III. Development of the Revised 1977 Behavior Checklist

The goal of the 1977 revision was to review and improve the pool of items in the checklist. This would ensure that the full range of potential problematic social and emotional functioning in kindergarten aged children was included. Thus, an initial enlarged pool of items had to be considered. An additional objective was to keep the Behavior Checklist brief (under 50 items) so that parents could complete the checklist within the limited time allocated for kindergarten registration and screening.

For the 1977 field test the Behavior Checklist was modified extensively on the basis of the following: analyses of the 1976 data; an exhaustive review of the literature; consultation with clinicians and educators; and by a series of pre-tests in the field. As may be noted, at each level of instrument development, revisions were proposed by the research staff, reviewed by experts in the applied setting, and evaluated through field testing.

First Revision of Behavior Checklist -- Item Selection

An extensive search of the literature on instruments used in a variety of settings to assess social-emotional functioning, generated a potential pool of 125 new items for consideration in the revised Behavior Checklist (Rutter et al, 1970; Conners, 1970; Kohn et al, 1972; Ireton et al, 1972; Behar, 1974; Achenbach, 1976). An item was selected for consideration if it was age-appropriate and tapped one of eleven areas of social-emotional dysfunction. These areas, viewed by clinical consultants as covering the most common areas of social-emotional dysfunction in four- and five-year-old children, were: 1) aggression; 2) hyperactivity/distractibility; 3) depression; 4) social withdrawal; 5) fear/anxiety; 6) apathy/lack of initiative; 7) somatization; 8) motoric problems; 9) language problems; 10) compulsivity; and 11) immaturity.

The pool of 125 items was reduced through further review by assessing each potential item not only for age and content appropriateness, but for its specific applicability for a self-administered parent questionnaire to be completed within the context of kindergarten entry. A number of instruments (Achenbach, 1976; and Conners, 1970) had been developed from items descriptive of clinic populations. Others (Behar, 1974; Kohn et al, 1972) had been developed for administration by teachers or other professionals. The goal of the first phase of development was to select and/or modify items that could be understood by parents in clear behavioral terms and that they would not see as stigmatizing for their child.

After the pool of items was reduced using the additional criterion of appropriateness for parent administration, a subset of 43 new items remained. This subset, along with the 36 item 1976 pilot Behavior Checklist,

was given to 12 clinical consultants[6] for review. Each consultant was asked to select from the total of 79 items those considered most crucial in screening for social-emotional dysfunction.

The outcome of the first review by clinical consultants was a 59 item Behavior Checklist. Eighteen of these items were derived from the 1976 pilot checklist. An item from the 1976 checklist was retained if it met a combination of the following criteria: 1) if it was substantively strong (as evaluated by consultants); 2) if the frequency distribution of 1976 parental responses showed that 10 percent or fewer than 10 percent of the children would be designated as having problematic behavior; and 3) if the item showed adequate test-retest reliability.

Pre-test of First Revision of Behavior Checklist -- 1977

The first 59 item version of the Behavior Checklist was pre-tested for face validity. It was reviewed by parents, teachers, and preschool personnel to ensure that items selected were tapping intended areas of behavior.

Face validity of the Behavior Checklist was evaluated by administering it to the parents of 16 children (age 3 - 5) enrolled in a preschool program in Quincy, Massachusetts. After screening, parents were interviewed by clinical staff of the project as to item format and clarity of wording. In addition, parents provided information as to their general reaction to the instrument which was designed to focus on negative or problematic behaviors. Candid assessments of the total instrument as well as specific items were solicited.

As a result of this pre-test, the wording of four items was changed,

one item that parents found offensive was deleted, and the format of one item was modified. Parents reported that the wording and format were generally clear, and the items were relevant to the behaviors of the preschool child.

As a further check on face and content validity, the research staff met with school personnel on an ongoing basis. The Behavior Checklist was reviewed by administrative personnel, guidance staff, kindergarten teachers, and nursing staff. They suggested several changes in wording and format. In general, these meetings focused on the crucial issue of whether the items included in the Behavior Checklist were appropriate for school-age children in the target community, one which the staff believed was representative of other working class and lower-middle-class communities.

As a result of the pre-test, and further review by the Quincy school staff, 50 items were selected for inclusion in additional pre-tests of the 1977 checklist.

Additional Pre-tests of the Second Revised 1977 Behavior Checklist

The 50 item Behavior Checklist was pre-tested in the field so that final selection of items could be made on both substantive and empirical grounds. The frequency distribution of responses to items was evaluated in the first pre-test.

The test site was a middle-sized community, comparable in terms of demographic characteristics to Quincy, Massachusetts. The checklist was filled out by the parents of 100 children during kindergarten registration. The results indicated that for all but two items, 10 percent or less of the parental responses fell in the two most extreme response categories.

The second revision of the Behavior Checklist was also pre-tested to assess test-retest reliability of the items. The checklist was completed by the parents of 34 children attending a private day care center in Boston. The mean test-retest interval was 10 days. Table 1 displays those items included in the final edition of the checklist. Reliability estimates showed acceptable test-retest reliability of items. The median Tau B for these items was .68. The frequency and reliability data, along with the evaluation of each item by clinical consultants, were used as criteria for final item selection.

Development of the Third Revised Behavior Checklist

A final panel of consultants from psychiatry, psychology, education, and statistics was convened to select items for inclusion in the last revision of the checklist. Thirty-eight items were selected on the basis of substantive (content) and empirical (statistical) grounds. Each item was considered to be an important source of information about the child in screening for social-emotional dysfunction.

1977 Screening of the Finalized Instrument

The Behavior Checklist, along with the additional demographic, health, and developmental components of the Parent Questionnaire was administered to the parents of 750 entering kindergarten children during the Quincy spring 1977 registration. Table 2 includes the frequency distribution of responses to each of the items in the 1977 Behavior Checklist. These data are comparable to the findings from earlier pre-tests. The frequency distributions of responses were consistent with the expectation that most children entering kindergarten are free from major behavior problems as judged by parents. These results emphasize the necessity to investigate more

closely the group of children perceived by parents as exhibiting behaviors in the more negative ends of the continuum.

IV. Further Development of Clinically-Based Tools to Evaluate Validity of the Behavior Checklist

A number of methods employing clinical expertise have been utilized or are being planned to assess the congruence between the Behavior Checklist and clinical assessments of children.

Standardized clinical interviews of children were developed by the staff psychologist in collaboration with the project's psychiatric consultant.[7] A panel of child clinicians (experienced psychologists and psychiatrists) evaluated the instrument during its development. The goal of this instrument was, in part, to evaluate congruence in assessment of specific behaviors as noted by parental report and clinicians' observations. It had the additional goal of developing scoring procedures which are consistent with clinical experience.

A companion instrument, a semi-structured parent interview, was created to obtain more detailed information on specific behaviors. This instrument will also provide additional data concerning parent-child interactions, stresses or changes in the family, and support systems available to the family.

A number of additional projects are in process which will contribute to an evaluation of the construct validity of the Behavior Checklist. In one series of studies, Behavior Checklists from the normative sample are being compared to those drawn from parents of children in clinic settings. It is predicted that as the severity of children's behavior problems increases,

parents of these groups of children will indicate a greater frequency of behavior problems via the Behavior Checklist. In order that a more complete view of the child may be gained, professionals working with the clinic samples will complete a modified version of the Behavior Checklist and participate in brief interviews developed for that purpose. An observation instrument is also being developed which will allow the observer to assess the frequency of occurrence of behaviors previously evaluated by parents and professionals through the Behavior Checklist. The comparison among these sources of data will provide, in part, the necessary information to assess the validity of the Behavior Checklist.

In an additional series of studies, the entire 1977 cohort will be followed-up in 1978 by collecting a number of relatively simple data from parent and peer ratings, classroom observations, and school records. A subsample of children will be followed through a series of more extensive procedures which will include observations and interviews with school and other relevant professionals. The goal of the follow-up procedures is to provide the longitudinal data needed to identify those constellations of early factors which may accurately predict the occurrence of later social-emotional dysfunctioning.

V. Discussion

Epidemiological studies indicate prevalence rates for emotional disorder in school age children ranging from 2 percent (Bureau of Educationally Handicapped, 1970) to 25 percent (Rutter et al, 1970). The data clearly reveal the need for assessment instruments for early identification of children when remediation can be most effectively applied.

The instrument discussed in this paper has been developed as a tool to identify those children in need of early intervention. It encompasses a multi-disciplinary approach to children's early behavior problems. From its inception a large school system collaborated continuously in each stage of development of the screening battery.

Discussions of screening batteries must include ethical as well as scientific concerns. These concerns are clearly related since inaccurate screening procedures may have harmful results. We are cautioned by Stringer (1974) against the results inherent in screening methods which produce either "false negatives" (children scoring as without problems, but proving to be in need of special help) and "false positives" (children designated as having problems but actually proving to function well by other measures). The group most likely to be "false negatives" are children with low visibility, the "low protest type" (Stringer, 1973) who, though "at risk", are not obtrusive enough to catch the attention of the screening device and, hence, go undetected until their symptoms become more entrenched and more apparent. Of equal concern to both clinicians and researchers are the "false positives" who may be falsely labelled as "handicapped" when in truth there are no problems. The issue of false labelling is a proper concern for all who work with children (Hobbs, 1975).

To avoid premature and possible false labelling, it is paramount that screening be distinguished from diagnosis. Bower and Lambert (1961) warn against either confusing the two or thinking of them as synonymous. Screening tools should enable the screener to identify children who need further, more intensive assessments. Diagnostic tools on the other hand,

must have the quality of accurately pinpointing precise conditions which can only be preliminarily identified by the screening mechanism.

In spite of the hazards in screening, such as false labelling, there are a number of strong arguments, in addition to increasing legal mandate, for the importance of early identification of vulnerable children. Hobbs (1975) states that, "prevention is more effective and more economical as a rule, than repair; it is better to identify problems early and correct them promptly than to let them grow until a crisis requires action." Stringer (1973) found that most disturbed children were disturbed before they entered school and that maladaptive patterns of coping tended to strengthen over time without effective identification and intervention. This progressive worsening of problems left unidentified (and so untreated) is pointed out by others (Sapir and Wilson, 1967; Long, Morse, and Newman, 1971).

If screening is to be effective, it must occur within the context of a multiplicity of intervention possibilities that relate to the unique growth patterns of the young child. In the collaborating school system, school-based intervention programs have been developed for the mild to moderately disturbed child while more intensive community resources are utilized for more severely disturbed children (and/or their families).

The evolution of this screening battery occurred in response to the challenge of the state and federal mandates requiring communities to educate <u>all</u> children. This project is predicated on the hypothesis that through early screening and timely intervention, effective mental health services can be provided for <u>all</u> children.

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FOOTNOTES

[1] Massachusetts Special Education Law (Chapter 766)

[2] Public Law 94-142

[3] NIMH Grant #1 RO1 MH27458-02

[4] Included in this description are major components of the battery. Extensive revisions in the 1977 Parent Questionnaire resulted in increased demographic and health items and substantial changes in the Behavior Checklist.

[5] Items were also adapted from a self-administered questionnaire utilized by Melvin Levine, M.D. at the Children's Hospital Medical Center, Boston, Massachusetts.

[6] Consultants included child psychiatrists, clinical psychologists, developmental psychologists, preschool teachers, social workers, and educational psychologists.

[7] Lenore Rubin (project staff) and Myron Belfer, M.D. (consultant), the Children's Hospital Medical Center, Boston, Massachusetts

TABLE 1

TEST-RETEST RELIABILITY OF BEHAVIOR CHECKLIST ITEMS
PRIVATE DAY CARE CENTER -- SPRING 1977
(N=39)

ITEMS	TAU B
1. Likes to try new things	.64
2. Gets upset unless everything is in its place	.66
3. Has a bad temper	.65
4. Sits without doing anything unless someone gets him/her started	.55
5. Gets into accidents; hurts self	.69
6. Stutters and stammers	.70
7. Has other speech problems	.80
8. Asks for help when not really needed	.52
9. Acts tired; has little energy	.57
10. Turns head away when people pay attention to him/her	.56
11. Wets pants during day	.69
12. Able to leave mother easily	.64
13. Throws and breaks things	.60
14. Stares into space	.64
15. Has trouble sleeping (going to sleep, staying asleep, bad dreams)	.84
16. Cannot sit still	.51
17. Fears new things and situations	.50
18. Sleeps with parents at night	.96
19. Cries easily for no good reason	.76
20. Speech is hard to understand by those outside the home	.69

TABLE 1, continued

ITEMS	TAU B
21. Is awkward; bumps into things	.72
22. Clings to you or other adults	.77
23. Has to have something the minute he/she asks for it	.72
24. Is overly serious and sad	.84
25. Loses interest quickly -- goes from one thing to another	.60
26. Has accidents with bowel movements	.74
27. Complains of stomachache, headache, pains in arms or legs	.70
28. Is a loner	.77
29. Has trouble paying attention to what he/she is doing (for more than a few minutes)	.68
30. Has repeated movements like twitching or rocking	.75
31. Will not talk to people outside the family	.67
32. Has many fears (for example, animals, insects, loud noises, etc.)	.69
33. Would rather be left alone when adults try to play with or talk to him/her	.49
34. Likes to do things for self	.62
35. Fights with children outside the family (for example, hits, kicks, etc.)	.68
36. Gives up easily if things seem hard	.57
37. Nothing seems to please him/her; never seems quite satisfied	.72
38. Is considered by you to have behavior problems	.64

TABLE 2

FREQUENCY DISTRIBUTION OF BEHAVIOR CHECKLIST ITEMS

QUINCY PARENT QUESTIONNAIRE DATA - SPRING 1977
(expressed in percent)
(N=740)

	ITEMS	ALWAYS	OFTEN	SOMETIMES	RARELY	NEVER
*	1. Likes to try new things	45.7	33.7	19.3	1.1	.1
	2. Gets upset unless everything is in its place	3.3	7.5	36.0	37.5	15.8
	3. Has a bad temper	1.8	7.8	42.0	35.9	12.5
	4. Sits without doing anything unless someone gets him/her started	1.1	3.5	12.6	38.3	44.5
	5. Gets into accidents; hurts self	.8	3.2	26.2	47.4	22.4
	6. Stutters and stammers	.6	.4	8.6	15.2	75.2
	7. Has other speech problems	2.4	1.6	7.2	8.3	80.5
	8. Asks for help when not really needed	.7	4.3	39.2	38.9	16.9
	9. Acts tired: has little energy	.3	.3	10.5	34.2	54.7
	10. Turns head away when people pay attention to him/her	.4	5.1	28.3	31.5	34.7
	11. Wets pants during day	.6	.1	3.5	10.2	85.6
*	12. Able to leave mother easily	41.3	33.7	18.3	3.7	3.1
	13. Throws and breaks things	.1	.7	10.9	29.5	58.8
	14. Stares into space	.1	.6	11.0	29.5	58.8
	15. Has trouble sleeping (going to sleep, staying asleep, bad dreams)	1.5	3.3	12.1	28.3	54.7
	16. Cannot sit still	3.5	9.8	39.2	31.0	16.5
	17. Fears new things and situations	.4	3.5	33.1	37.3	25.8
	18. Sleeps with parents at night	1.4	2.3	12.9	22.0	61.3
	19. Cries easily for no good reason	.7	3.8	18.6	38.8	38.1

* These items will be reversed in scoring.

ITEMS		ALWAYS	OFTEN	SOMETIMES	RARELY	NEVER
20.	Speech is hard to understand by those outside the home	1.4	2.1	8.4	19.0	69.2
21.	Is awkward; bumps into things	-	2.2	11.2	32.7	53.9
22.	Clings to you or other adults	1.1	3.6	22.5	36.8	36.0
23.	Has to have something the minute he/she asks for it	3.3	10.5	41.4	29.6	15.1
24.	Is overly serious and sad	.7	1.0	8.8	33.2	56.3
25.	Loses interest quickly -- goes from one thing to another	1.8	7.0	33.0	43.9	14.3
26.	Has accidents with bowel movements	-	.4	2.3	11.1	86.1
27.	Complains of stomach ache, headache, pains in arms or legs	.4	2.8	20.8	33.5	42.6
28.	Is a loner	.4	2.4	17.5	33.0	46.7
29.	Has trouble paying attention to what he/she is doing (for more than a few minutes)	1.1	1.8	21.1	40.9	35.1
30.	Has repeated movements like twitching or rocking	.4	2.1	4.6	9.7	83.3
31.	Will not talk to people outside the family	2.6	2.2	19.8	31.1	44.2
32.	Has many fears (for example, animals, insects, loud noises, etc.)	1.0	2.1	18.7	33.0	45.3
33.	Would rather be left alone when adults try to play with or talk to him/her	.6	.8	14.8	31.4	52.4
* 34.	Likes to do things for self	28.1	50.5	17.5	1.4	2.5
35.	Fights with children outside the family (for example, hits, kicks, etc.)	.7	2.2	24.4	44.3	28.4
36.	Gives up easily if things seem hard	.7	6.3	43.6	38.9	10.5
37.	Nothing seems to please him/her; never seems quite satisfied	1.0	1.9	16.9	47.6	32.5
38.	Is considered by you to have behavior problems	.3	.8	12.5	22.0	64.4

* These items will be reversed in scoring.